

WHAT IS CLAIMED IS:

1. A sterilization apparatus comprising in combination:

- (a) a sealed first chamber capable of withstanding internal pressure and vacuum and having a sealable opening for introducing and removing articles to be sterilized;
- (b) at least one tray disposed within said first chamber for holding items to be sterilized;
- (c) a first microwave radiation generator;
- (d) a first waveguide for directing microwave radiation generated by said first microwave radiation generator onto the articles to be sterilized;
- (e) a sprayer for directing droplets of water onto the articles to be sterilized;
- (f) means for generating steam at greater than one atmosphere of pressure and for introducing the steam into said first chamber;
- (g) a pump for evacuating said first chamber before the steam is introduced thereto and for removing the steam after the sterilization process is completed; and
- (h) means for detecting arcing in said first chamber and for shutting down said first microwave radiation generator in response thereto.

2. The sterilization apparatus as described in claim 1, further comprising a filter capable of removing pathogens, and means for venting said sealed chamber through said filter.

3. The sterilization apparatus as described in claim 2, wherein said filter comprises a HEPA filter.